Long-term Care Insurance: Basic Pricing and Rate Increase Concepts

November 16-18, 2016

Presented By:
Vincent L. Bodnar ASA, MAAA
Disclaimer

This presentation is intended for educational purposes only and does not replace independent professional judgment. Statements of fact and opinions expressed are those of the individual presenter and, unless expressly stated to the contrary, are not the opinion or position of the Society of Actuaries, its cosponsors, its committees, or the presenter’s employers. The Society of Actuaries does not endorse or approve, and assumes no responsibility for, the content, accuracy or completeness of the information presented.
Purpose

- To provide a basic explanation of:
  - Long-term care (LTC) insurance product features
  - Pricing
  - Reserves
  - Premium rate increases
- The explanation is very simplified and meant for a non-technical audience
LONG-TERM CARE INSURANCE BASICS
LTC Insurance Benefits

UPON DISABILITY

LTC INSURANCE PAYS OUT...

MANY POLICIES ALSO REQUIRE RECEIPT OF LTC SERVICES

AT HOME

ASSISTED LIVING FACILITY

NURSING HOME
LTC Insurance Benefits

Limit on total amount paid out

Many policies do not pay:
- During the entire disability episode
- Until the disability lasts a certain amount of time

By law, policies must cover the insured for his entire life.
- Option to automatically increase benefits each year is offered at purchase, so they keep up with increases in costs of care

Not a lump sum:
a benefit is paid each day
up to a maximum benefit per day
The Chance of Using Benefits

LOW chance of use
MARRIED COUPLES
RIGHT AFTER PURCHASING COVERAGE

HIGH chance of use
INDIVIDUALS LIVING ALONE + AGE

YEARS AFTER BUYING COVERAGE

CHANCE OF USE
Premiums

Premium rates do not increase with age.

However, claims are expected to increase over time.

This creates a cash flow mismatch for insurers.
Premiums

**Premium rates** do not increase with age.

However, **claims** are expected to increase over time.

Insurers must set aside **some of the premiums** in early years in a **reserve**.
Premiums

**Premium rates** do not increase with age. However, **claims** are expected to increase over time. Insurers must set aside **some of the premiums** in early years in a **reserve**. Insurers use this reserve to **fund claims** in later years.
Setting Premiums Aside

Premium dollars are used as follows:

- Policy Administration
- Agent Commissions
- State & Federal Taxes
- Reserve Fund to Pay Future Benefits
- Distribution to Shareholders as Profit
The Reserve is Like a Savings Account

- Net premiums (DEPOSITS)
- Benefit payments (WITHDRAWALS)

Like a savings account, it earns INTEREST

- The savings account is held for the benefit of all the policyholders.
- It can only be used to pay benefits for those who become disabled.
- It is not paid to people who die or stop paying premiums.
The Net Premiums are Like Scheduled Deposits

The scheduled deposit amount (premium rate) is determined at the beginning based on estimates about:

1. Amount that will be withdrawn (benefit payments)
2. Interest rate that will be earned

If either of these estimates are different, the account may not have enough to cover future withdrawals.
WHAT CAN GO WRONG?
Changes in economic conditions in the past 20 years have led to a dramatic drop in interest rates.

The interest can change if the economy changes.

Many companies assumed that interest rates would be 6% to 8% when products were priced in the 1990s.

Rates have dropped to 3% to 4%
Withdrawals From the Savings Account
The amount of funds withdrawn is dependent on 3 key things:

1. The number of people that keep their policies up to the point when benefits begin to be paid

More people have kept their policies than originally expected. People are also living longer than originally expected.
Withdrawals From the Savings Account

Of the people who keep their policies, the number of people who use benefits

ASSUMPTION

REALITY

Industry experience has been mixed compared to what was originally thought.
Withdrawals From the Savings Account

Amount that is paid out to people who use benefits

Recall that a **lump sum benefit** is not paid when a person becomes disabled.

Amount paid will **not be known in advance**.

This amount paid is estimated based on past observations.

**It will depend on:**
- Number of days of disability
- Intensity of care
- Cost of care

Length of time in nursing homes has not changed much. However, **more people are receiving care in assisted living facilities, where people live longer**. This has led to higher benefits being paid.
WHAT HAPPENS WHEN ESTIMATES ARE NOT REALIZED?
A Simple Savings Plan Example

**ORIGINAL GOAL:** $10,000 in 10 years
When Not Enough is Saved: Need to “Catch-Up”

**ORIGINAL GOAL:** $10,000 in 10 years

**NEW GOAL AFTER 6TH YEAR:** $12,000 is needed by 10th year

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
<th>YEAR 4</th>
<th>YEAR 5</th>
<th>YEAR 6</th>
<th>YEAR 7</th>
<th>YEAR 8</th>
<th>YEAR 9</th>
<th>YEAR 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$1,000</td>
<td>$2,000</td>
<td>$3,000</td>
<td>$4,000</td>
<td>$5,000</td>
<td>$6,000</td>
<td>$7,000</td>
<td>$8,000</td>
<td>$9,000</td>
</tr>
</tbody>
</table>

Needed to **increase deposits by 50%** *(to $1,500)* to meet goal
With Hindsight

**THE “HINDSIGHT” DEPOSIT SCHEDULE**

Needed to **increase deposits by 20% (to $1,200)** to meet goal

- $0
- $2,000
- $4,000
- $6,000
- $8,000
- $10,000
- $12,000

YEAR 1 | YEAR 2 | YEAR 3 | YEAR 4 | YEAR 5 | YEAR 6 | YEAR 7 | YEAR 8 | YEAR 9 | YEAR 10

$ SAVED

CURRENT YEAR

$ SAVED

PREVIOUS YEAR(S)
Application of the Simple Example: How it Should Work

In this example of a block of LTC policies, at a given point in time:

**EXAMPLE: NET PREMIUMS (DEPOSITS) AND THE RESERVE FUND ARE ENOUGH TO FUND FUTURE BENEFITS**

This model shows the two sides in balance.
Out of Balance

In this example of a block of LTC policies, at a given point in time:

EXAMPLE: EXPECTED FUTURE WITHDRAWALS OUTWEIGH THE DEPOSIT SCHEDULE

The two sides are out of balance. There will not be enough money to fund benefit payments.
Restore Balance: Premium Rate Increase

In this example of a block of LTC policies, a premium rate increase is implemented to restore balance:

Balance is restored via rate increases.
In this example, a premium rate increase is implemented, but it is not enough to restore balance:

- **Other funding must come from:**
  - **Company surplus:** one-time “deposit” which is ultimately from other policyholders or shareholders.
  - **Other policyholders:** Taken as needed from premiums of other policyholders.
QUESTIONS?